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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,778	09/25/2001	Jonathan Dwight Berry	5814-25	1763

7590 01/02/2003

McCormick, Paulding & Huber  
City Place II  
185 Asylum Street  
Hartford, CT 06103-3402

EXAMINER

COOLEY, CHARLES E

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 01/02/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. <b>09/963,778</b>	Applicant(s) <b>Berry et al.</b>
	Examiner <b>Charles Cooley</b>	Art Unit <b>1723</b>



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on \_\_\_\_\_.
- 2a)  This action is **FINAL**.      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-5, 7, and 9-32 is/are rejected.
- 7)  Claim(s) 6 and 8 is/are objected to.
- 8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on 25 Sep 2001 is/are a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13)  Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some\* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a)  The translation of the foreign language provisional application has been received.

- 15)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

<ol style="list-style-type: none"> <li>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). <u>2</u></li> </ol>	<ol style="list-style-type: none"> <li>4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____</li> <li>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6) <input type="checkbox"/> Other: _____</li> </ol>
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## OFFICE ACTION

1. This application has been assigned to Technology Center 1700, Art Unit 1723

and the following will apply for this application:

a. Please direct all written correspondence with the correct application

serial number for this application to Art Unit 1723.

b. Telephone inquiries regarding this application should be directed to the Technology Center 1700 receptionist at ~~(703)~~ 308-0651 or to the Examiner at ~~(703)~~ 308-0112. Official facsimile correspondence filed before a final office action should be transmitted to ~~(703)~~ 872-9310. Official facsimile correspondence which responds to a final office action should be transmitted to ~~(703)~~ 872-9311. All *post-allowance* papers (e.g., Information Disclosure Statements, Rule 312 Amendments, petitions, etc.) should be mailed to **Box Issue Fee** or submitted via facsimile to ~~(703)~~ 308-5864.

c. Inquiries regarding application status, matching responses with applications, patent term questions, locating and retrieval of applications, incomplete office actions, requests for copies of office actions and/or references, requests to remail office actions, small/large entity status, or other administrative inquiries should be directed to the **Technology Center 1700 Customer Service Center** at ~~(703)~~ 306-5665.

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***Information Disclosure Statement***

2. Note the attached PTO-1449 forms submitted with the Information Disclosure Statement filed 18 DEC 2001.

***Drawings***

3. The drawings are objected to because of the following informalities:
  - a. Figure 1 has two arrows labeled "26" which is improper.  
Correction is required.
4. Applicant should verify that (1) all reference characters in the drawings are described in the detailed description portion of the specification and (2) all reference characters mentioned in the specification are included in the appropriate drawing Figure(s) as required by 37 CFR 1.84(p)(5).
5. Applicant is required to submit a proposed drawing correction in response to this Office Action. Any proposal by the applicant for amendment of the drawings to cure defects must include a print or pen-and-ink sketch showing changes in *red ink* in accordance with MPEP § 608.02(v).

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**IMPORTANT NOTE:** The filing of new formal drawings to correct the noted defect may be deferred until the application is allowed by the examiner, but the print or pen-and-ink sketch with proposed corrections shown in *red ink* is required in response to this Office Action, and *may not be deferred*.

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***Specification***

6. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
7. The abstract is acceptable.
8. The title is acceptable.

***Claim Rejections - 35 U.S.C. § 112, second paragraph***

9. Claims 13-16 and 18-32 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13: "the central axis" lacks antecedent basis.

Claim 14: it is unclear how the recited angle is defined - between what reference axes, surfaces, or planes is the angle generated?

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Claim 15, line 1: "the passage" refers to which one of the previously recited passages?

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Claim 17, line 3: the “x component” is not defined by the claim rendering the scope of the claim indefinite.

Claim 18 recites that at least two corrugated strips are positioned in the gap which does not appear to be enabled. It appears there is one strip 16 per gap 14 which defines multiple passages 18. It does not appear that the invention contemplates multiple strips 16 per single gap. Note page 5, lines 27-28 states “A strip 16 is positioned in each gap 14 and together with the partitions 12 defines a plurality of passages.” The scope of claim 18 and the claims depending therefrom is therefore indeterminate.

Claim 21 has ending punctuation in the form of two periods.

Claim 22, line 1: “adjacent gaps” lacks antecedent basis.

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Claim 23: “the gaps” lacks antecedent basis.

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Claim 24: “the gaps” lacks antecedent basis.

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Claim 25: “adjacent gaps” lacks antecedent basis.

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Claim 27: "the central axis" lacks antecedent basis.

Claim 28: it is unclear how the recited angle is defined - between what reference axes, surfaces, or planes is the angle generated?

Claim 32, line 3: the "x component" is not defined by the claim rendering the scope of the claim indefinite.

10. Each pending claim should be thoroughly reviewed such that these and any other informalities are corrected so the claims may particularly point out and distinctly claim the subject matter which applicant regards as the invention, as required by 35 U.S.C. § 112, second paragraph. The claims are being treated on the merits to the extent they are considered definite and enabled.

***Claim Rejections - 35 U.S.C. § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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12. Claims 1-5, 7, 9, 10, 12-21, and 27-32 are rejected under 35 U.S.C. § 102(b) as being anticipated by Collins (USP 2,558,238).

The patent to Collins (USP 2,558,238) discloses an apparatus having partitions 12, 17, 18 defining gaps or pair of gaps therebetween; a corrugated strip 15 in a respective gap; each strip 15 defining passages having an orientation wherein the orientations are identical as seen in Fig. 2; the passages having the recited hydraulic diameter and length and angular orientation; the partitions being approximately concentric (Fig. 2).

13. Claims 1-5, 7, 9, 10, 12-21, and 27-32 are rejected under 35 U.S.C. § 102(b) as being anticipated by Cannon, Jr. et al. (USP 2,572,445).

The patent to Cannon, Jr. et al. (USP 2,572,445) discloses an apparatus having partitions 40 defining gaps or pair of gaps therebetween; a corrugated strip 41 in a respective gap; each strip 41 defining passages 42 having an orientation wherein the orientations are identical as seen in Fig. 2; the passages having the recited hydraulic diameter and length and angular orientation; the partitions being approximately concentric (Fig. 2).

14. Claims 1-5, 7, 9-21, and 27-32 are rejected under 35 U.S.C. § 102(b) as being anticipated by Minch et al. (USP 3,347,381).

The patent to Minch et al. (USP 3,347,381) discloses an apparatus having partitions 11 defining gaps or pair of gaps therebetween; a corrugated strip 12 in a

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respective gap; each strip 12 defining passages 15 having an orientation wherein the orientations are identical as seen in Fig. 1; the passages having the recited hydraulic diameter and length and angular orientation; the partitions being approximately concentric (Fig. 1); there being at least six gaps (Fig. 1).

15. Claims 1-5, 7, 9-21, and 27-32 are rejected under 35 U.S.C. § 102(b) as being anticipated by Roussakis et al. (USP 5,415,233).

The patent to Roussakis et al. (USP 5,415,233) discloses an apparatus having partitions 88 defining gaps or pair of gaps therebetween; a corrugated strip 86 in a respective gap; each strip 86 defining passages 92 having an orientation wherein the orientations are identical as seen in Figs. 3-4; the passages having the recited hydraulic diameter and length and angular orientation; the partitions being approximately concentric (Fig. 3); there being at least six gaps (Fig. 3).

\* \* \*

With regard to the above rejections, the operational and functional language of the claims (e.g., the language "to impart a tangential velocity component" and all recitations drawn to the "swirl number") have been considered but fails to impart or invoke any further structure or means (per 35 USC 112, sixth paragraph and MPEP 2181) to the pending apparatus claims which defines over the applied prior art. The only claimed structure related to the tangential velocity component limitation is the passages having an orientation which is inherent to all structure and clearly shown by

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the drawing figures of the prior art. All recitations drawn to the swirl number are totally devoid of any structure to define over the prior art as swirl number itself is not a structural element. Anticipation under 35 U.S.C. § 102(b) is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of a claimed invention. See *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1570, 7 USPQ2d 1057, 1064 (Fed. Cir.), cert. denied, 488 U.S. 892 (1988); *RCA Corp. v. Applied Digital Data Sys., Inc.*, 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984). Since every element of the claimed invention is disclosed by the applied prior art, the rejections under 35 U.S.C. § 102(b) are considered proper.

#### ***Allowable Subject Matter***

16. Claims 22-26 would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112 and to include all of the limitations of the base claim and any intervening claims.

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17. ~~Claims 6 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.~~

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18. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

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The prior art of record does not teach or fairly suggest the passages in adjacent gaps having orientations that are opposite each other.

***Conclusion***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Charles Cooley whose telephone number is **(703) 308-0112**.

21. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1700 receptionist whose telephone number is **(703) 308-0651**.



Dated: **24 December 2002**

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**Charles Cooley**  
**Primary Examiner**  
**Art Unit 1723**

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